

AMATEUR RADIO



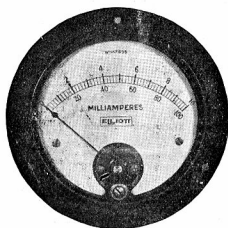
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AMATEUR RADIO

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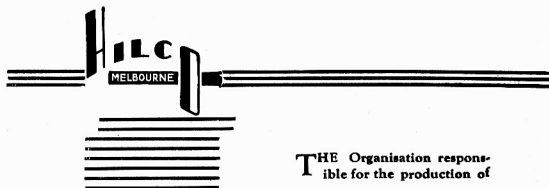
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Editorial . .

The news from Cairo of the loss of 100KC of our 'Forty Metre' band, as our exclusive property is disquietening in the extreme. It is the first loss we have ever experienced and the pill is no sweeter for that fact. However one reviews the outcome of Cairo the position is serious for our crying need is for more territory. Each year the amateur ranks are swelling to larger and yet larger proportions, each year the revenue derived by the various Governments from Amateurs becomes larger in proportion and finally each year the debt owed to the Amateur by Radio itself for co-operation in the advancement of the Science and by the civil populace for services rendered in emergency communications, becomes greater. On our existing bands numerous commercials have operated for years in defiance of the Berne Convention, despite the repeated protests of the IARU. On frequencies adjacent to the band in question the "V Machines" turn for hours on end cluttering up the ether for no other reason than to maintain a legal right to the channel.

Amateur Radio has kept pace with the increasingly difficult problem of preventing chaotic conditions on our already overcrowded bands by designing special receivers of controllable selectivity, by the education of Amateurs to ensure clean cut, sharp signals, by the development of directional antennae and the voluntary self-imposition of regulations. It is a triumph of co-operation and applied knowledge that Amateurs have been able to maintain some semblance of order and practical long distance communication despite our ever increasing numbers.

Obviously a partial loss is better than a total one, but that is no reason why the Amateur should accept the position with complacency. We in Australia are fortunate that there exists a sympathetic understanding and co-operation between the P.M.G. Department and the Wireless Institute, and we can rest assured that the Australian Government, like the

American and, we hope, many others, will not place any SW broadcast stations within that 100 KC of Amateur territory. However, the additional QRM during DX periods will be severe from even a few foreign B/C stations and our only consolation is that the interference to them will be many times worse than to ourselves. Maybe the Governments who put stations in that sector will realise the futility of operating where stations are already many deep and certainly they will press for "Forty Metres" as an exclusive B/C band at the next International Convention. Therefore, there is a job for every single individual Ham throughout the world during these next four years to seize every available opportunity of publicising Amateur Radio in the right quarters, clearing misconceptions and doubts as to the rightness of our cause and eliciting every possible form of assistance for the next "Battle for Frequencies."

Returning to Cairo may we, on behalf of the Amateurs of Australia, convey our sincerest thanks and our sense of gratitude to the IARU and through them to the ARRL for the magnificent fight that they put up for Amateur Radio at Cairo. Spontaneous expressions of admiration of their efforts have reached us from many who were there and in every case the praise for the Amateur Contingent was unstinted. We leave Cairo behind knowing that everything possible was done.

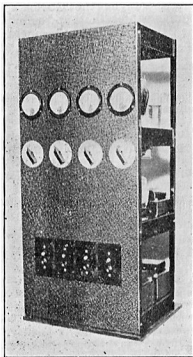
Amateur Radio has passed the stage of being a schoolboy's hobby. It is regarded as a serious exacting Science drawing some of the finest minds of the day to its ranks. It can truly be said to represent, in each country, a true cross section of all that is best in the community. Admittedly we have many who are not experimenters within the fold, but at least it can be said that they possess a potential value far greater than a commercial's "V machine." If only 5 per cent. of the total number

(Continued on Page 13.)

The All Australian 50 Watt Transmitter

(By VK3ML, Technical Editor.)

How many times have we heard the complaint that a really high efficiency transmitter cannot be built up unless we use the components specified in say an American technical article? It is agreed that results



cannot always be duplicated unless the details are closely followed and, in many cases, owing to the fact that the parts are not obtainable locally.

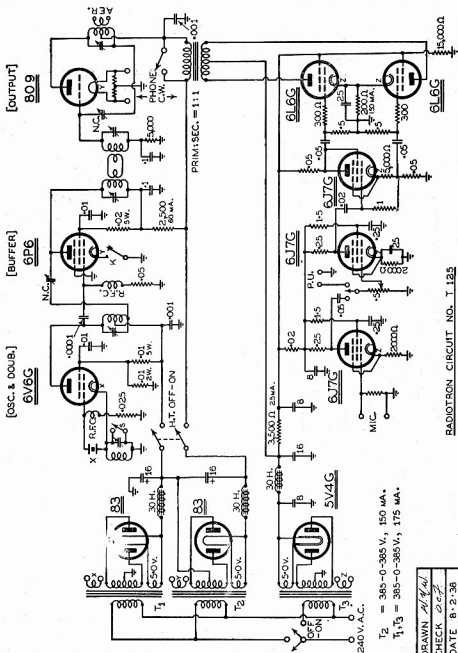
The primary object, therefore, in describing this 50 watt transmitter was to illustrate that a high efficiency unit can be built up and the components for it are obtainable locally. It was the magazine committee who suggested that a typical circuit be evolved, built up, thoroughly tried out, and finally written up in this magazine for the benefit of those who are about to rebuild or to commence their ham radio life.

We did not have to look far in this field for the circuit, as the Amalgamated

Wireless Valve Co. Ltd. in their excellent journal, "Radiotronics," recently published the very one we were after. Consequently we took the liberty of duplicating wire for wire, the circuit employing a 6V6G 6P6 809 combination. As a matter of fact, we were delighted to no end with the support given by various manufacturers who offered assistance by way of contributing components for the transmitter con-



struction. In this respect we desire to publicly thank the following donors of accessories:—For the R.C.A. valves, Messrs. Amalgamated Wireless Valve Co. Ltd.; for the transformers, Messrs. Hilco Transformers Pty. Ltd.; for the rack in which the set is housed and the other Eddystone equipment employed, Messrs. Stratton Ltd., Birmingham; all the T.C.C. fixed and electrolytic condensers were contributed by The Australasian Engineering Equipment Co. Pty. Ltd.; and the very many odd parts, including wire, ter-

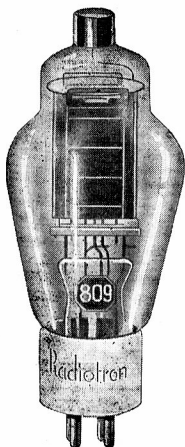


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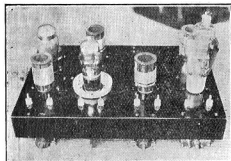
Ratings—Class "C" Telegraphy.

Filament (max.)	6.3 volts	2.5 amp.
Plate Voltage (max.)	750 volts	
Plate Current (max.)	100 mA.	
Plate Dissipation (max.)	25 W.	
Typical Power Output	55 W.	

Price **25'** - nett.

RADIOTRONS

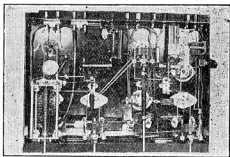
minals, Steatite valve sockets and power appointments were donated by Messrs. P & L Wireless Pty. Ltd. Thus, in every section of the unit, only the highest grades of components are employed. At the same time such an action on the part of the firms above mentioned surely indicates the support they are willing to give the amateur of Australia, and in return we repeat our strong recommendation made in the past of supporting your advertisers.



Glancing over the circuit of this transmitter it will be noticed that the power supply is an economical one. Standard 83 type rectifiers are used with the new 5V4G especially used in the modulator stage. In order to keep the cost of transformers down use has been made of seriesing two low voltage supplies to obtain the 600 volts for the 809 stage. The 6V6G receives a little over 300 volts from this well regulated power stage. Another problem is solved in this handy method of connection and that is of overcoming the necessity for high rating filter condensers. The standard TCC electrolytics handle the voltage output with ease. It must be pointed out that it is highly desirable to employ filter chokes made to give the required inductance at the maximum current rating. Checks made on several standard products have indicated that they are certainly 30 henries under test, but under LOAD test they seldom show readings anywhere near the rating. It is obvious from the photographs in this article that very thick cores of the transformers and chokes indicate they are built to stand the duty demanded of them. Then again, it is false economy to install cheap chokes as the DC resistance plays a very important part in the burning up of power. The

writer has one or two types in the junk box whose resistances are between 1,000 and 2,500 ohms. What a difference when compared with these Hilco jobs at only a hundred or so ohms! One might say that we have at least started with the right sort of power supply.

Briefly describing the layout from the photos Fig. 1 shows the front appearance of the unit; the meters being from left to right, the 6V6G plate, 6P6 plate, 809 grid and 809 plate respectively. The tuning dials situated immediately under the meters are for the same circuits. From Fig. 2 it will be seen that the two series power units occupy the lowest deck and are complete with their chokes and electrolytics. The next deck holds the modulator complete with its power supply. All the RF stages are mounted on the third chassis and the top deck is unused and keeps the dust off the RF shelf.



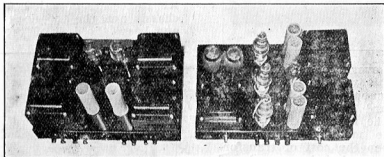
All the individual decks are depicted in Figs. 3, 4 and 5. On the left of Fig. 3 we have the power supply, and on the right the modulator unit. Fig. 4 shows the RF end of the works less the shields, whilst Fig. 5 is a bottom view of this unit. The cathode coil for the 6V6G is mounted under the chassis and is tuned by an air dielectric trimmer which can be shorted out by the switch on the side for straight penthode operation. In front of the 6V6G is the plate coil for that stage. On the right of this coil can be seen the plate coil and the 6P6 stage. Between the 6P6 and the 809 is the grid coil of the P.A. and of course the 809 is very obvious on the right with its anode coil at the rear. All the tuning condensers are mounted in an inverted condition under the chassis for dust prevention and the meter leads are brought out through midget stand

off insulators on the chassis. Eddy-stone adjustable brackets and pillar insulators were used to mount the condensers on as the rotors are "hot" with DC and required insulating from the chassis. The plate lead for the 809 is brought through the chassis by the lead through cone insulator in front of the high voltage tuning condenser.

Running through the actual circuit we have the 6V6G acting as either a Tri-tet or straight penthode oscillator according to the position of the cathode coil shorting switch. An-80 meter crystal serves the 80, 40, and 20 meter bands and a 40 meter controller can be employed for the 10 meter section. The output of the 6V6G gives ample drive for the 6P6 buffer which operates under

driving the 809 as well as connecting the plate output to a separately tuned aerial coil. On all bands the final amplifier functions as a straight amplifier although there should be no reason why it should not be used to double down to five meters when driven on 28 mc. Keying is accomplished in the cathode of the 6P6 and a small key impact filter ensures freedom from clicks.

In order to modulate an input to the P.A. of about 50 watts, it is necessary to have available at least 25 watts of audio power. A suitable modulator is shown in the circuit diagram and will be seen to consist of two Radiatron 6L6G valves in push pull class AB1, giving an output of slightly over 25 watts. The earlier stages in the modulator con-



maximum class C conditions to deliver a power output of approximately 12 watts. This stage is shown with a neutralising condenser in order that maximum stability may be obtained even with the somewhat limited screening. The grid plate capacity of the 6P6 is about 0.7 mmfd and should be neutralised for good results. The P.A. is a Radiatron 809 which promises to be the most popular tube marketed by the AWA Co. so far. It is a High Mu triode operating on both phone and CW under its maximum Class C conditions which are:—

Plate volts 600 volts. Plate current 83 ma. Power input 49.8 watts, typical power output 38 watts.

When operated on CW the valve, the valve has ample reserve of power handling ability, although this cannot be used owing to the limitation of power input. The adoption of constant supply voltage on both CW and phone simplifies the circuit arrangement. Link coupling is favoured for

sist of a 6J7G pre-amplifier, 6J7G voltage amplifier and a 6J7G phase splitter. This latter operates under conditions of low gain and is used merely in order to avoid the use of a transformer. The overall fidelity of this arrangement is excellent and since the 6L6G valves operate into a nearly constant load and harmonic distortion is low. Provision for a pickup is shown on the input to the second stage of the modulator. If a sensitive microphone is used with an output of over 0.2 volt R.M.S., the pre-amplifier stage may be omitted and the input taken to the pickup terminals. In this transmitter a crystal microphone is used and the gain from the amplifier is rather more than ample.

With regard to the finish of the outfit, all the chassis and supports are glossy black sprayed and the front panel is coated with a large black crystal enamel, which sets the controls off to a nicety. The actual height of the rack is 32 inches with

four trays 15 in. x 10 in. x 2 in. In order to ensure protection from HV short circuits from the terminals to the chassis all terminals carrying high power are mounted on Eddy-Frequentite and can stand the pressure.

Very little trouble indeed was encountered in getting the whole transmitter going. This may be put down to the care taken in the original laying out of parts so that leads may be short within reason and interaction avoided between stages. Actually two whole nights were taken up in simply playing with the components and a stretch of imagination to visualise where they would eventually be mounted. It proved worth while and one cannot be sorry for mistakes at a later date. Heavy ground leads in both the RF and AF sections were put in as the first wiring job as many troubles have arisen from this neglect in the

past. A cable of wires connects all the terminals at the rear of the chassis, making quite a neat looking power wire connection. This is not shown in the photos for reasons of better visibility of the other parts.

Right throughout the transmitter special attention was given to insulation for RF. Eddystone plug-in coil formers made of LD9 dielectric are excellent in this respect and the frequentite coil sockets go to make for high efficiency. Actually the coil diameters are about right for the spacing of the components as the fields are not strong to permit the wandering of stray RF. The only remaining section to be mentioned is the switching. As the high voltage is in excess of the rating for toggle type switches the push button variety are used on the front panel and control the DC to the C.O., buffer and P.A. as well as on the primaries of the RF and AF power transformers.

INVENTORY OF COMPONENTS.

(Other than those specified in the circuit)

Tuning Condensers—

Cathode 6V6G Eddystone, Cat. No. 978.

Plate 6V6G Eddystone, No. 900/100 microdenser.

Plate 6P6 Eddystone, No. 900/100 microdenser.

Grid 809 Eddystone, No. 900/100 microdenser.

Plate 809 Eddystone No. 1083 single ended, 3500 v. type.

Neutralizing condensers, Eddystone, No. 1088 variable 1-8 mmfd., 2500 v.

Tuning dials, Eddystone, No. 1027.

Low power resistors are all IRC brand Both the paper and mica fixed condensers are TCC for safety and efficiency.

The coil data for the various bands are as follows:—

Cathode	6V6G—23 turns 22 DSC wound on Eddystone 1039 lin. former
Plate	6V6G—80 meters, 46 turns 22 enamel, centre tapped, 935 former
	40 meters, 22 turns 16 enamel, centre tapped, 935 former
Plate	6P6—80 meters, 26 turns 22 enamel, No. 935 former.
	40 meters, 12 turns 16 enamel, No. 935 former.
	20 metres, 8 turns 16 enamel, No. 935 former.
Grid	809—80 meters)
	40 meters) as for 6P6 plate.
	20 meters)
Plate	809—80 meters, 46 turns 16 enamel, centre tapped 1002 former
	40 meters, 22 turns 16 enamel, centre tapped 1002 former
	20 meters, 16 turns 16 enamel, centre tapped 1002 former

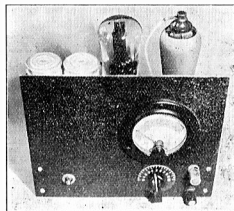
All link coils are 2 turns on the coil formers.

Design and entire construction was carried out in the workshop of VK3ML.

A Valve Voltmeter for the Measurement of 5, 15 and 50 Volts

This instrument has been designed with the intention of producing a measuring apparatus which, whilst it is simple and cheap to construct, provides sufficient precision for most practical purposes.

An 0-2 milliammeter is usually available and this was adopted as a convenient indicating instrument for the voltmeter. To be effective the voltmeter must therefore meet with the following specifications:—



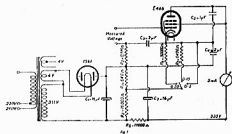
1. It must have three ranges, viz., 0-5, 0-15 and 0-50 volts.
 2. The maximum milliammeter current for the maximum measured voltage in each range is to be approximately 2 mA.
 3. The minimum milliammeter current for zero measured voltage in each range is 0 mA. (Note: The milliammeter current should not cut-off before zero measured voltage is reached.)
 4. The input circuit of the voltmeter should not damp the circuit on which the measurement is made. In other words, grid current is not permissible in the voltmeter valve.
- Fig. 1 shows the circuit which was finally adopted.

The instrument is A.C. operated and an E446 R.F. Penthode is employed as an anode bend detector.

A fixed negative bias of 13 volts is developed across the resistance R1 which forms part of a voltage divider connected across the high voltage supply. The voltage divider has a comparatively low resistance so that the bias remains substantially constant when the plate current of the valve increases.

For this particular circuit a negative bias of 13 volts is just sufficient to cut off the plate current and for the 0-5 range the valve is thus adjusted to the most favourable part of its characteristic curve (see Fig. 2). If 5 volts is measured the milliammeter current will be 2mA.

For the measurement of higher potentials, however, the range of the milliammeter would be exceeded and grid current would occur. Thus, to permit the measurement of 50 volts and still maintain the milliammeter current at 2mA, we require to in-



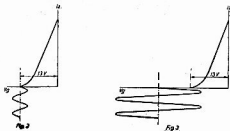
crease the bias to at least 50 multiplied by the square root of 2 equals 70 volts.

If this were accomplished by fixed bias methods we would obtain a result something akin to Fig. 3 wherein only the higher voltages are measurable.

As a solution to the problem, additional automatic bias is derived from resistances switched into the cathode circuit. Resistance R5 is used for the 0-15 volt range and R4 for the 0-50 volt range. For a no signal condition the fixed bias of 13 volts across R1 just cuts off the plate current and no potential drop occurs across the cathode resistor.

As the measured voltage increases, however, the grid is driven less negative and cathode current occurs. As the cathode current increases so does the bias developed across the cathode resistor and a measure of compensation is effected. Thus, for the 0-15 and 0-50 ranges sufficient extra bias is developed to limit the milliammeter current to 2 mA for maximum measured voltages.

To obtain a suitable operating characteristic it became necessary to join the plate and screen grid to-



gether and also to operate these elements at a potential in excess of the normal rating for the valve. Since the plate current will not exceed 2 mA the use of a high plate voltage is permissible and as the valve is a penthode, no secondary emission will result from joining the plate and screen.

Smoothing of the high voltage supply is effected by means of two 16 uF condensers in association with a 10,000 ohm Resistor (R6). In addition to obviating the need for a choke, this resistance serves as a protection for the milliammeter.

For example, if the input terminals to the voltmeter are open there is no bias applied to the valve. Un-

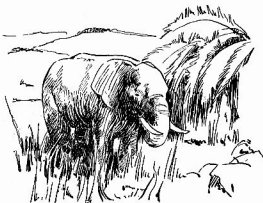
der these circumstances, the milliammeter current is limited by the resistance R6 and the milliammeter will not be damaged. Moreover, the use of the resistance R6 permits the employment of any 0-2 milliammeter for the internal resistance of the instrument is very small compared with 10,000 ohms.

The milliammeter is bypassed to cathode by a μ F condenser (C5) so that when measuring high frequencies the impedance in the instrument will not cause a voltage drop. This condenser should be non-inductive and offer a very small series resistance to A.C.

In the measuring ranges of 0-15 and 0-50 volts this valve voltmeter is practically independent of mains voltage fluctuations. If the mains voltage increases the plate voltage will rise accordingly and hence also the plate current will tend to increase. The higher plate current will give a greater drop across the cathode biasing resistor and the plate current will return to its original value.

This is not the case, however, for the 0-5 range, for this range is not provided with a cathode resistor. Thus a variation of 10 per cent. in the mains voltage corresponds to an error of 8 per cent. in the reading of the milliammeter. It will, therefore, be necessary to adhere to the original mains voltage on the 0-5 range for accurate results.

When using this voltmeter care should be taken that there is always a conductive connection between the input terminals as otherwise the



CQ AFRICA !

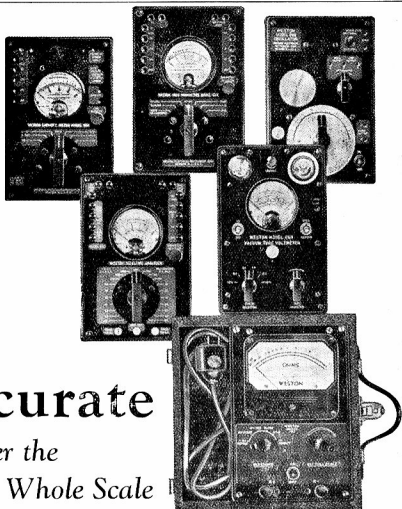
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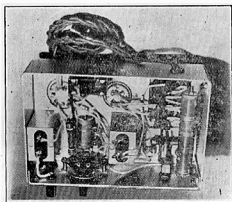
valve will not receive negative bias.

If, for example, we wish to measure a voltage via a condenser, the terminals of the voltmeter must be shunted by a grid leak resistance of from 1 to 2 megohm.

CALIBRATION.

Although this voltmeter is not an instrument of great precision it has considerable practical value, particularly as the majority of measurements made are only for comparison.

Each voltmeter must, of course, be separately calibrated. The curves of the original experimental instrument are shown in Fig. 4. 50 cycle A.C. mains will usually be employed



for the calibration and for extreme accuracy it would normally be necessary to determine whether the supply is reasonably free from harmonics. Suitable filtering could be employed to eliminate such harmonics.

For the most practical purposes, however, it will be sufficient to calibrate the vacuum tube voltmeter directly from the supply using a step-down transformer or other means of reducing the mains voltage to suitable values.

Actual calibration is carried out by comparing the V.T. voltmeter readings with those of a moving iron or current operated type of A.C. meter.

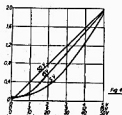
MEASUREMENT OF STANDARD OUTPUT IN RADIO RECEIVERS.

The instrument under discussion may be employed as an output meter for the testing or servicing of radio sets, a suitable hook-up being shown in Fig. 5.

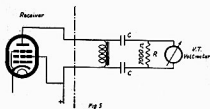
The resistance "R" would have a value equal to that quoted by the tube manufacturer as optimum load

for the power valve. For power pentodes this would normally be 7,000 ohms.

The condensers "C" should be at least 4uF thus having a small impedance in comparison with 7,000



ohms at audio frequencies. The inductance of the audio choke should be as high as practicable, as the A.C. output of the valve is divided between the choke and the resistor. The standard output of .05 watts corresponds to 18.7 volts measured across the 7,000 ohm resistor.



D.C. MEASUREMENTS.

The voltmeter may also be used for the measurement of D.C. voltages; such as, for example, the effect of A.V.C. on the bias of the controlled valves. The instrument should be separately calibrated for D.C. measurements and the positive side of the voltage to be measured is connected to the grid of the E446.

of Amateurs are regarded as serious experimenters, a conservative estimate surely, this represents over

(Continued from Page 3.)

6,000 men who are actually paying their Governments for the right to advance the Science of Radio gratis. Commercial Radio is becoming a bigger battle yearly and less and less money is available for research unless the results will directly enhance the balance sheets, thus Radio itself will be the more grateful to experimenters for research free of all cost to the community. From a National standpoint—but need we go further? We know how righteous is our cause. There are four years ahead, fellows, go to it!

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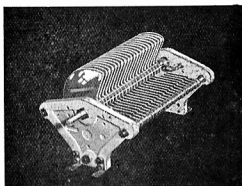
A.O.P.C.

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Just arrived—a new shipment — Frequentor Transmitting Condensers with $\frac{1}{2}$ in. diameter removable shafts. Silver plated plates, double spaced. Frequentor non-hydroscopic end plates.

3000 Volts Working.



Frequentor Condensers

Type 400, .00025. List Price, 70/-T*

Type 400, .0005, List Price, 77/6T*

Midget Type

Midget Type Frequentor Condensers as described above are available in the following capacities:—

.000025	...	List Price, 10/6
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.000075	...	List Price, 12/6
.0001	...	List Price, 13/6

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G.P.O., Melbourne.

Contests Section

VK-ZL 8C MX Phone Contest 1938

The following are the rules:—

1. All entrants to win prizes must be financial members of the W.I.A. if residing in Australia and of the N.Z.A.R.T. (Inc.) if residing in New Zealand. Any station operated by non-members may enter the contest, but will not be eligible for awards or prizes.
2. The contest shall be by means of amateur radio telephony transmissions on the 80 metre band only.
3. There shall be three sections of the contest, namely:—
 1. Transmitting. Unlimited Hours.
 2. Transmitting. Limited Hours.
 3. Receiving.
4. The contest will commence at midnight, Saturday, July 16th (New Zealand Standard Time), and finish at midnight Sunday, July 31st, 1938 (New Zealand Standard Time).
5. Seven days operation only will be allowed, the days of operation not necessarily to be on consecutive days. To come on the air calling for the contest or to send a letter combination as provided in Rule 6 is sufficient in either case to establish for that day.

TRANSMITTING SECTION, UNLIMITED HOURS.

6. During the course of each two way communication (QSO), each station will exchange QSA, R, reports and exchange a six letter combination. Every log submitted shall contain the following details concerning each QSO: (a) Time. (b) Correct call sign of station worked. (c) QSA, R, reports given and received. (d) Six letter combination given and received. (e) Points claimed. (f) At end of log total points claimed. The six letter combinations shall be arrived at as follows:—

Every station shall select three letters of the alphabet whose combination shall not be in alphabetical order or form a three letter

word, viz., YOU, TOO, BIT, CAT, etc., and these three letters will form the latter half of every combination sent out by the station. The first three letters will be taken from the last three letters of the immediately preceding QSO.

Example:—At the beginning of the contest ZL4XX selects the letters ASD and VK2AA the letters TWE. They contact both for their first contacts. ZL4XX sends his three letters only, not having worked a station before, and VK2AA does the same. On ZL4XX's second QSO his letters will become TWEASD and VK2AA's will be ASDTWE.

7. No time limit to be imposed on any QSO.
8. No schedules permitted.
9. No station to be worked more than once.
10. Only one operator permitted per station.
11. All transmissions to be in accordance with the Radio Regulations.
12. Points for each QSO will be claimed as detailed in the following table, which is based on the Great Circle distances to the nearest 500 miles:—

15	35	20	15	15	15	5	ZL	1	&	2
15	35	20	15	15	15	15	ZL	3	&	4
5	20	5	5	5	5	VK	2			
5	15	5	5	5	VK	3				
										4
10	20	10	VK	4						
5	15	VK	5							
20	VK	6								
VK	7									

LIMITED HOURS.

13. Competitors desiring to enter for this section will be governed by all the preceding rules, but must not commence operation in the contest before 11.15 p.m. (New Zealand Standard Time) if residing in New Zealand, and if residing in Australia before 11.15 p.m. local standard time of the State in which the competitor is located, on any date,

operation is to cease at 7.15 a.m. on the following morning, 7.15 a.m. being N.Z. or local standard time as the case may be. Stations contacted need not necessarily be in the limited section of the contest. For the purpose of this section only a day's operation as specified in Rule 5 will be computed as being between the hours limiting operation.

14. In submitting their entries for this section, in accordance with the detail required in Rule 6, entrants shall state on the top of the log sheets the section entered for.

RECEIVING SECTION.

15. Rules 1 to 12 inclusive, of the preceding rules shall apply to the receiving section substitution as applicable "listening" and "heard" for the words "calling," "worked" and "contacting."

16. A log submitted for this section shall be in the same form as required by Rule 6, with the addition of details as to what licensing district the entrant is residing in. Points shall be claimed as set out in Rule 12.

AWARDS.

17. A trophy will be awarded to the winner of each section (ZL and VK combined). In addition prizes will be awarded to the winning two stations in New Zealand by the N.Z.A.R.T. (Inc.) and the W.I.A. will award two prizes in Australia.

18. Logs from Australian entrants shall be forwarded to the W.I.A., Box 2127L, G.P.O., Sydney, and must reach there not later than August 24th, 1938. Logs from New Zealand entrants shall be forwarded to the N.Z.A.R.T. (Inc.), Box 489, Wellington, C.I., and reach there not later than August 31st, 1938.

19. To each log shall be attached a declaration that the entrant is a financial member of his national society (if such is the case), that he is the only one to operate the station, that he only operated his station for seven days for the purposes of the test.

VK 160 MX Contest 1938

In accordance with the unanimous wishes expressed at the 1938 Federal Convention, the Federal Executive now presents a new contest.

Although the number of contests is increasing each year, activity on the 160 metre band is decreasing, and in promoting this contest we feel sure that all entrants will obtain a better conception of the usefulness of this band for interstate communication.

The representative of the N.Z.A.R.T. at the Federal Convention expressed a wish that his organisation be allowed to co-operate and assured us of their support.

The contest will take place on Saturday, 10th September, 1938, commencing at 1200 G.M.T. and continuing until 2000 G.M.T.

Rules are as follows:—

1.—The contest is open to all licensed amateurs, but only members of the W.I.A. or N.Z.A.R.T. are eligible for awards.

2.—The test is of a contact nature, and with each contact a six-letter cypher must be exchanged before a point is scored.

3.—The cypher to be exchanged will consist of six letters, the first three being chosen by the entrant to be used as his identifying letters throughout the contest and the remaining three are to be the first three letters of the last station contacted. The initial cypher will consist of three letters of the originating station, followed by AAA, e.g., XYZAAA.

4. Stations with which an entrant can work are those beyond a radius of 200 miles, but within Australia, New Zealand and New Guinea.

5. Each station can be connected once only during the contest.

6. Districts are as follows: VK2, VK3, VK4, VK5, VK6, VK7, VK8 and VK9, ZL1, ZL2, ZL3, ZL4.

7. All transmissions to be in accordance with the Radio Regulations.

Amateur Radio

8. SCORING.—One point will be scored for each 200 miles covered in the contact.

9. The total number of points so obtained will be multiplied by the number of districts worked.

10. All logs must reach THE CONTEST COMMITTEE, W.I.A. FEDERAL EXECUTIVE, Box 2127L, G.P.O., SYDNEY, by 10th October, 1938. The log must contain:—

- (a) Time.
- (b) Call sign of station contacted.
- (c) Cypher sent and received.
- (d) Contact points claimed, number of districts worked and total score.

11. Certificates will be awarded to the leading station in each district, and a special certificate will be awarded to the outright winner.

VK-ZL 80 Metre Telephony Contest, 1937 Scores

VK Unlimited Section.—VK2ADT, 750; VK2NY, 740; VK3WE, 640; VK3EP, 605; VK3HX, 180; VK3PW, 115.

VK Limited Section. — VK7AB, 380; VK3TL, 350; VK3KT, 110; VK7LZ, 75; VK4AW, 65.

Receiving.—R. E. Trebilcock, 770.

VK-ZL 1937 DX Contest Results

AUSTRALIAN SCORES.

Senior.		2UD	7020
VK2ADE	83430	2VN	5410
4UR	20438	2DA	5387
2HI	20100	2RB	5280
2PX	15780	4RF	6564
7AB	15776	3HG	3420
2EG	13460	3WY	3400
7YL	13460	3CX	2790
2QL	12924	5CR	1932
7LZ	10980	3BG	1920
3QK	9375	5JT	1614
3IW	8088	5HG	918
5RX	7712	6CP	615
4BB	51455	2AVJ	185
2HF	41312	5TX	72
3KX	34020	3XB	30
		Junior.	
2TF	33675	VK2DG	32800
2DG	33170	3MR	31434
2ZC	31512	2ADE	28106
2RA	30618	2QE	21000
2NY	29862	2X	17644
4HJ	27270	4JX	17085
5FM	26864	2NY	16720
2XT	26100	4BB	15373
2QE	21091		

7YL	14937	2VU	1968
5RX	13800	2PX	1320
2HV	12165	2RA	585
5QR	10368	3XB	567
5LL	7410	2AFJ	345
7AB	6972	5CP	142
3HG	5196	5TX	94

NEW ZEALAND SCORES.

Senior.		1CV	2334
ZL1DV	71335	1BR	2005
2CI	52435	3GR	1134
2GN	44736		
1GX	25984	Junior.	
1LM	25100	ZL2QA	72192
3AX	13104	1MR	29348
3AB	11951	4GA	25425
1MR	5832	1JI	14340
4GM	5823		
1LZ	3176	Receiving.	
1JI	2513	ZL166	44032
		ZL419	766

HIGHEST SCORES IN DIFFERENT COUNTRIES.

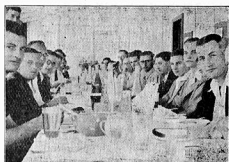
Senior.		LY1J	396
ZL1DV	71235	VQ3KAR	1284
VK2ADE	83430	HB9J	2344
W6CXW	11460	VR4OC	1736
PAOUN	5030	ZS5U	605
OELER	2183	D4SNP	3040
SUIM	3370	OH5NR	231
SPILN	108		
LU9BV	2376		
HAIP	4030	Junior.	
YR5AA	3051	W6MVK	9782
F8YZ	2940	ZS5U	2241
OK2OP	4620	SU2TW	108
ON4MD	1554	SPIMX	12
G6WY	4590	YM4AA	630
K6JPD	2043	HA8C	303
XE1CM	2160	ILIT	819
VE3AU	3530	FA3JY	66
VQ8AF	263	F3LE	432
CX1CG	1752	HA7N	612
ES5D	12	PAOUN	3210
PK1BX	546	VS7RP	952
SM6WL	744	OE7JH	1845
YM4AD	650	OE1ER	1744
OA4J	1920	G6XL	3168
VS7MB	2656	YR5CF	2304
LA2Q	465	D4CDM	1944
NY1AE	2925	VK2DG	32800
J2MI	2880	ZL2QA	72192
		GI6TK	236

HIGHEST SCORES IN W, VE & G DISTRICTS.

Senior.		W8ZY	5930
W1GCW	3800	W9ARL	6680
W2BHW	5790	VE5BI	2232
W3EVT	7150	VE4GD	564
W4DCZ	5150	G2IO	2530
W5QL	6340	G5YU	1449
W6CXW	11460	G6WY	4590
W7DVY	505	G8PF	1512

GM5YG	2349	W6MVK	9782
GM6RV	3152	W9UOX	564
		VE5AAD	168
Junior.		G6XL	3168
W2CJM	3820	G8HA	690
W3CSY	1160	GM2JF	1498

N.S.W. Field Day at Wyong



RECEIVING CONTEST.

Z1166	44032	India	BRS311
OEI51	2528		6820
BRS1535	7280	HB9RKY	1592
HB9RNV	5940	DE3727/P	8380

Amongst our Advertisers

Our advertisers, new and old, present some particularly interesting features to hams in this issue. Their presence in these pages imposes a definite responsibility on members to accord them preference when buying.

WIDDIS DIAMOND DRY CELLS.

The famous P5 Diamond Battery and Dry Cells ensure a high percentage of current efficiency. They can deliver current down to the lowest voltage stage, and give ample warning for replenishment by a gradual and not a sudden decline. Increased service, dependability and unvarying consistency are claimed as prime factors.

TRIMAX TRANSFORMERS.

A Melbourne firm of manufacturers have announced a new release of great interest to all amateurs. This is a Universal modulation transformer to match all types of modulation tubes to Class C stages of any impedance. Their advertisement appears elsewhere in this issue.

THE T.C.C. CONDENSERS.

One of the most interesting pronouncements in the issue is that of the Australian Equipment Engineering Co. Pty. Ltd., manufacturers of the dependable T.C.C. Condensers. Quite a number of other products are offered to hams, including the usual types of electrolytics, Ken-

Rad valves, pick-ups, Birnbach insulators and Velocity mikes. Make a note of a few shop-soiled specials quoted in this issue.

A. G. HEALING LTD.

Members and readers generally are particularly asked to note an interesting new departure by this old firm. "More watts per dollar," is the proud slogan that features the Taylor transmitting tubes, which are becoming increasingly popular with amateurs. Other offerings by this firm are the D7T dynamic microphone, of compact design and remarkably inexpensive, and the Pailard grammo motors, Swiss made and "built like a watch."

HARTLEY'S.

One of the most comprehensive announcements is the full page display of the Hartleys goods, featuring the best of equipment for all amateur requirements—Astatic crystal pick-ups, battery electric clocks, morse keys, switches, power chokes, headphones, and other adjuncts to up-to-date transmitting and receiving equipments. This firm with its two big Melbourne stores, has a very special claim on the attention of hams, so let them see your faces as often as possible.

(Continued on cover 3.)

"More Watts per Dollar" with Taylor Transmitting Tubes

By virtue of their superior qualities, Taylor Tubes are becoming more popular every day with Amateurs, who can appreciate quality in output. Call or write for full particulars of all types.

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T20	25/-	TZ40	40/-	866	17/6
TZ20	25/-	T55	70/-	866JR	14/-
T40	40/-	T125	£6/5/-		



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The D7T "American" Dynamic Microphone features high output, small size, ruggedness, fidelity, efficient design with long life and stability. Measures only 2½ in. x 1½ in., and has an impedance of 10,000 ohms. Excellent for amateur communication, public address indoor and outdoor. Retail only at £5/5/-.



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Direct your enquiries to A. G. Healing Ltd., attention K. R. Rankin (VK3KR), who will be pleased to discuss your requirements with you.



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VK3WI on Five Meters

During the week preceeding the week-end 21st and 22nd May, much work was done at the rooms of the W.I.A., Vic. Division, at Queen street, Melbourne. On Saturday, 14th May, a working bee, consisting of Messrs. O. Davies, J. Kerley, G. Searle, B. Hanson, VK's 3JO, 3OT, 3VH and 3DH, spent a busy time erecting a thirty foot cross beam to the forty foot mast at the top of the roof of W.I.A. To either end of this horizontal bar, 5 meter beams were attached, with that result that we had two "H" type arrays suspended clear of all metal guy wires and with a height of 26 feet above the roof.

This job was just completed by the time the light failed and so having attached a pair of feeders to each antenna, we "called it a day." At the north end of the horizontal member we had a simple "H" array cut for the low frequency end of the band and at the south end an "I" array with reflector cut for the high frequency end of the band. The "north end" antenna was the property of VK3OT and at the opposite end, 3JO, with the former directed generally towards Europe and the British Isles and the latter towards North America.

On the following Tuesday evening the two transmitters were installed. VK3JO supplied the gear for the high frequency end job and the writer produced part of the low frequency band end transmitter. It was decided to operate these two stations from a common pickup, with separate microphones and to be known as VK3WI on 59.5 megacycles, and VK3WI on 56.5 megacycles. The VK3WI (59.5 mc.) was entirely the property of VK3JO and consisted of a 6P6 ECO, 6L6 doubler and 6L6G final, modulated by class AB 2A5's—power input, 40 watts. VK3WI (56.5 mc.) consisted of P.P. -10's in a species of copper tube "long line" stabilised oscillator, modulated by class AB-2A5's—the oscillator 3DH (yours truly) and the modulator was kindly loaned by Mr. Geoff. Searle of Regent Radio Pty. Ltd. Input to this transmitter, 36

watts. Both the aforementioned transmitters were "excited" by one Piezo pickup (by 3KU).

During Wednesday and Friday evenings very thorough tests were conducted both on the two 3WI transmitters and through the 10 and 20 meter relay stations. The outside "doings," that is, the 10, 20 and 40 meter relay systems are suitably discussed in another contribution to this write-up of the "test."

The arrangement for the 24 hour test was to commence at 4 p.m. on Saturday, 21st May and keep both stations on the air continuously until 4 p.m. on Sunday afternoon. The relay stations would, of course, do likewise. The subject matter of the transmission, to be frequent phone announcements from each station, regarding its own frequency, also an identification announcement from the relaying stations to avoid harmonic reception (if any) from causing a misunderstanding. Naturally, it was realised that continuous phone would be just about impossible, so VK3KU generously donated six copies of a record covering the necessary general information with tone modulation interspersed.

Well, Saturday afternoon came around and since we at 3WI were all ready in plenty of time we actually started up at 3.30 p.m. All went well and at 4 p.m. we commenced receiving reports from "locals" and some of the many helpers at the Institute rooms made arrangements to have the W.I.A. S.W. receiver operating on the 40 metre band in order to have a communication link with any of the relaying stations, the control station (3KU-14mc) and to receive any reports that may come through via radio.

Time marched on fairly rapidly thereafter and there is very little to recorded, however, towards the small be said that has not already been hours of the morning, our interest, at least, was kept up by the sterling work of the relay stations, the control station and the 7 mc. reporting stations.

(Continued on Cover 3.)

HAMS

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8 mf. Type 606 Electrolytics, 460v. 4/6 (N)

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1in. Birnbach Insulators 1/4 each (T)

.1 mf. Stedipower Moulded Cond. 1/- (N)

Bruno Velocity Mikes £10/10/- (O)

SHOP SOILED SPECIALS:

1 Only—T.B. 1/50 Philips Tube £4

4 only—Acme, .0005 mf. Var. Cond., counter balanced. 6/-

1 G.R. .0005 Var. 6/-

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Phone: MU2315.

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28 and 56 M.C. Notes

(A. Pritchard, VK3CP.)

Conditions at present on ten metres seem to indicate a rather short skip for most of the mornings. Up till this month, we have been hearing the phones from the States with such excellent strength, but they are now conspicuous by their absence. New Zealand's stations have shown up in considerable numbers with plenty of punch. As far as we know the last five metre tests have not been heard in other parts of the world. VK3WI at the Institute had an excellently stable well modulated sig on the air for the 24 hour period, and Herb's (VK3JO) 3 stage rig did a fine job (all through the night, hi!). VK3CZ, using the 3rd harmonic tank circuit, had plenty of xtal controlled power on 5 during the morning, but did not hear any DX on the super (465 K.C., IF's). Other VK3's had plenty of punch here, but these modulated oscillators are absolutely unintelligible on the super (using 465 KC, IF's) and the carriers are broad ac. VK3NP relayed the 3WI transmission, and was heard at good strength by K6's, who changed down to 5 with no results. Ten seems rather quiet now, as only the usual VK's are on. Many VK2's have good strength, and VK2GU and YQ seem the most consistent. The latter is using a pair of Eimac 35T's in his final, and may W6's say his phone compares very favourably with 2GU. VK2AD also has good sigs and was heard qso J2TG, which has been the only Jap heard or qso'd in VK. ZL4DQ has been on the lookout for 5 mx DX. He has plenty of output from an Eimac 100 TH on both 5 and 10 metres, and the preceding stages run a pair of 53's, 6L6 doub. 5 mx. 807 buff on 5 and 10 mx driving the final. He has 2 ants—a vertical $\frac{1}{2}$ wave and vertical 8JK beam. On Sunday, 5th June, his sigs were R8 on one of the doub. sections of the 53 linked to the vert. $\frac{1}{2}$ wave; so he changed his 100 TH to 5 mx, but we later qso'd on the 10 metre overtones only. ZL4DQ wants schedules with VK's and has heard VK5ZU calling "cq test 5

metres" on 13th March at 6 p.m., so evidently his super has efficiency there. VK6MW has excellent quality and punch, and is using a new rotary 8JK beam which is 30 feet over all and 8 feet across. He qso'd VK5IT and 2YQ with good strength, but they were not audible here. W9BCX was R8 phone here at 1.45 p.m., Sunday, 5th June, and was only using a pair of 6L6 tubes in his final. The antenna is the interesting part, being a $\frac{1}{2}$ wave dipole with a director a 1/10th wave in front and reflector $\frac{1}{2}$ wave back. ZL3DJ also uses a similar idea, and the actual measurements are as follows:—The elements are also horizontal and all cut to resonate on 28200KC., 17ft. 5in. long refl., 16ft. 11in. dipole, 16ft. 3in. director, with the following spacings: 10% of a wavelength between refl. and dipole, giving 3ft. 6in., and 15% of a wavelength between dipole and director, giving 5ft. 3in. This antenna was only one "R" point down on the States, compared with an elaborate H type, having 6 half waves in phase, arranged 3 above and 3 below, so evidently the combination with the above dimensions halved would be very attractive on 5 metres. One of the few powerful phones heard and easy to work at present is W3CBT; his antenna is an H type beam 80 feet high and the outfit has a 6L6 co 40 xtal, RK20 doub., RK47 buff and PP RK38's final with 700 watts input and modulated by Class B 203A! We are hearing many commercial harmonics, also K6LCV and K6MVV when the band appears dead, JNM3 and PLJ being the loudest harmonics. The band seems to opens out for an hour around 11.30 a.m. and later at 3 p.m., but the majority of W's have closed down. No VK4's have been heard this month. W5HEK has power also, and a new KW job has a 6L6 co tritet 807 doub., and PP 250 TH final; a pair of 8JK antenna stacked one above the other put a hefty signal in VK and New Zealand.

VK3MR DX Notes

It becomes necessary for me once again to remind you dx men that I am unable to reply to all letters, but I can only say that they are appreciated to the full, so please keep it up and keep your eye on the date of closing. Don't forget to add the times and frequencies of this rare dx.

Since my return to the air, conditions do not appear to be very good and even W's are not coming in with their usual punca and you have to dig for the rare stuff . . . winter was always a bad time for real dx, and during the 7mc days, this time of the year was the time to rebuild the rig in readiness for the dx season, but still, there is a lot to be worked all the same. It is good to be on the band again exchanging dogs with even the W's; it sorta bucks you up, just like a good tonic, something that can never be experienced with a hundred fone contacts (what have I said now?). I feel so good that I can even stand the "Air Raiders" slinging off at my mike! Say O.M., very pleased to notice you have taken notice of my words, they were meant for your ears! Just too bad you will have to sign your name in future.

Evidently a statement to the fact that you have worked so many countries will not satisfy some of the real dx men . . . it seems that the verified contacts count. What about you Ron? (3KX) 2DG has worked 109 and has 92 verified—any better? If it wasn't for this dx racket, radio would lose more than half of its fascination—if any one is polite enough to ask me I'll tell you next month why.

At last we have a very active station in New Guinea in the form of VK9BW, 14400 kc. on most nights. Also one from Papua, VK4KC, 14375 kc. They are much sought after by the W's. W1BUX works some good dx in the early a.m.'s now as his new daughter has him on the go early doing his stuff as all fathers have to (so I'm told). It was in this way that 5KO ex 3WL worked some of his best dx in days gone by!

2DG with others have reported working the above new VK districts and 2DG also has worked the following juicy ones:—UK1CC, 14055 kc., 6.50 a.m.; HK3AL, 14405 kc., 3.30 p.m.; T18GA, 14275 kc., 4 p.m., and our old pal K6BAZ is now operating from Howland Island, which was in the news recently during the search for Mrs. Putman. His freq. is 14375 kc. Not much from the South Africans and little from South America. VK5LD tells me that they can't get out too well over in VK5.

For those looking for some of the harder W states for the WAS will be pleased to learn that the following stations are on the job and are keen to work VK's. This is from 2DG. New Mexico, W5GZU, 14350 kc.; Utah, W6FRN, 14375 kc.; Nevada, W6FUF, 14060 kc.; Wyoming, W7GGG, 14360 kc., and South Carolina, W4BPD. Just call "CQ" Nevada and see how many W1's come back! It will surprise you. Next month I will give a similar resume of the BERU tests and our own October tests. All get ready for the D.A.S.D. Test in August.

A brief resume of the past ARRL dx tests will be of interest to both old and new hams. The first test was held in May, 1927, and the idea was to exchange an 8 word technical msg with usual number, and the answer was given to the next W worked. It ran for two weeks and the bands used by the W's were as follow:—18.7 to 21.4, 37.5 to 42.8, 75 to 85.7, and 150 to 200 meters, and the VE's also used the above and a band on 52.5 meters. In 1928 a similar test was held in Feb. No test held in 1929, and all tests since then have been held in March except 1930 in January, all using the present bands. Up to 1931 the test was of a msg handling nature, but in 1932 a different stunt was tried which proved unsatisfactory to many. The idea was to call for so many hours on the different bands and then listen at other periods for dx stations calling and as logs were sent in so it was ascertained just where you were being heard, no

'Parco' High Fidelity Audio Transformers

Input Audio Transformers. Line to Grid.				List.
LG51	50 to 100,000 ohms	LG55	50 to 500,000 ohms	40/-
LG101	100 " " "	LG105	100 " " "	40/-
LG201	200 " " "	LG205	200 " " "	40/-
LG251	250 " " "	LG255	250 " " "	40/-
LG501	500 " " "	LG505	500 " " "	40/-
LG1001	1000 " " "	LG1005	1000 " " "	40/-
LU15—Universal Input Type—17, 50, 125, 200, 250, 333 and 500 ohms to Grid				55/-

All above types are fitted in cast iron case finished in Silver, French Grey or Black with terminals on top of case. Primary shielded from secondary in all types.

Interstage (Coupling) Transformers. One Plate to One Grid.				
SS1.	1 to 1	Primary Inductance		
SS2.	1 " 2	125 henries at		
SS3.	1 " 3	10 MA D.C.		
SS4.	1 " 4			18/-

		Push Pull Transformers.		
SP10.	1 to 1	Primary 125 henries at		
SP15.	1 " 2	10 MA D.C.		
SP20.	1 " 1	Standard P.P. Type.		
SP30.	1 " 1½	Ratio Primary to 1		
SP40.	1 " 2	Secondary.		
				20/-

P.P. Plates to P.P. Grids.				
DP10.	1 to 1	Ratio Primary to Full Secondary.		
DP20.	1 " 2	Standard Double P.P. Type		
DP30.	1 " 3			
DP40.	1 " 4			27/-

All above fitted in welded sheet iron cases, finished in Silver, French Grey or Black. Hook-up leads brought out underneath can. Prices for cast cases on application.

Class AB & B Driver Types.				
BB1.	30 to 19 Class B			18/6
BB2.	30 " PP30 Class B			18/6
BB3.	30 " PP49 Class B			18/6
BB4.	217 " B240 Class B			18/6
BA8.	42 " PP42 Pentode AB2 Fixed Bias			30/-
BA9.	42 " PP42 Pentode AB2 Self Bias			30/-
BA10.	42 " PP42 Triode AB2 Fixed Bias			30/-
BA11.	42 " PP42 Triode AB2 Self Bias			30/-
BA12.	6N7 " 6N7 Class B			30/-
BA13.	6F6 " 6L6 PP Class AB1			34/-
BA16.	6F6 " 6L6 PP Class AB2			37/-
BA17.	6C6 " 6L6 PP Class AB1			34/-

These types are fitted in welded steel cases, but cast iron cases can be fitted at additional cost.

Output Transformer Types.				
OA1.	Single Triode to Line, 200,500 ohms 0. db.			20/-
OA2.	PP Triode to Line, 200,500 ohms plus 10 db.			30/-
OA3.	PP Triode to Voice Coil, plus 10 db.			30/-
OA4.	Single 45, 50, to line 200,500 ohms			35/-
OA5.	Single 45, 50, to Voice Coil			35/-
OB5.	PP 45 or 50 types to Line 200,500 ohms			40/-

(Continued Opposite)

QSO's, only listening. This was won by VK3ZX and VK3VP, both with 100 points. 3ES and 2OC were also prominent in this test. Each test since then has been run on the present scheme of handling numbers only and has been shortened to ten days. The only suggestion I can offer to improve this test, especially for countries outside of W, is to limit the hours of working to a reasonable period based on local time in each different country, say from 6 p.m. to midnight during the week and a longer period during the week-end. This will give everybody an equal chance as well as attract three times the entries. It is worth considering.

The winners from its inception are as follow, 1927 to 1937. By the way, the second test in 1928, the first prize of a xtal controlled rig with an 852 in the final was won by OA7CW (OA old VK prefix). All other tests, a certificate has been issued. 1st, OA2SH, OA7CW, OA7CH, VK3HL, VK3ZX/VP, VK3ML, VK3MR, VK3GQ, VK3MR, VK3MR, respectively.

Radiotron Releases

A complete series of 6.3V. .15A. heater valves is now available in the Radiotron range. These are particularly intended for use in receivers operating from a 6 or 12 volt supply where a reasonably heavy current is practicable but where economy is desired over the heavier drain types commonly used in A.C. receivers.

The range comprises the following types:—6D8G Converter: Heater 6.3V. .15A. 6G6G Power Pentode: Heater 6.3V. .15A. 6L5G General Purpose Triode: Heater 6.3V. .15A. 6N5 Magic Eye Tuning Indicator: Heater 6.3V. .15A. 6S7G Super Control R.F. Pentode: Heater 6.3V. .15A. 6T7G Dou-Diode High Mu Triode: Heater 6.3V. .15A. In addition to these types there are also two twin triodes, each fitted with two units having similar heaters, but the total current being twice as great since the two are connected in parallel. 6C8G Twin Triode Amplifier: 6.3V. .3A. 6Z7G Twin Class B Amplifier: 6.3V. .3A. Small quantities of all these types are held in stock.

OB6.	PP 45 or 50 to Voice Coil	40/-
OB7.	PP 2A3 to line 200,500 ohms or Voice Coil	40/-
OB8.	PP Pentode 42A to line 200,500 ohms	40/-
OB9.	PP Pentode 42A to Voice Coil	40/-
OB10.	PP Pentode 42AB1 Fixed Bias to line or Voice Coil	40/-
OB11.	PP Pentode 42AB1 Self Bias to line or Voice Coil	40/-
OB12.	PP Triode 42AB2 Fixed Bias to line or Voice Coil	40/-
OB13.	PP Triode 42AB2 Self Bias to line or Voice Coil	40/-
OP14.	PP 6L6 Class A to line or Voice Coil	40/-
OP15.	PP 6L6 AB1 250 Volt Screen to Line or Voice Coil	45/-
OP16.	PP 6L6 AB1 300 Volt Screen to Line or Voice Coil	45/-
OP17.	PP 6L6 AB2 250 Volt Screen to Line or Voice Coil	50/-
OP18.	PP 6L6 AB2 300 Volt Screen to Line or Voice Coil	50/-

All output Transformer types can be wound with multiple line or voice coil secondaries.

Multiple Line—50, 125, 200, 250, 333 and 500 ohms.

Multiple Voice Coil.—1.3, 3, 4.5, 7.5 and 15 ohms.

Additional price for Multiple Secondary Windings, 9/-.

OA types are fitted in welded sheet iron cases with hook-up leads brought out underneath.

OB types and OP14 are fitted in cast iron cases with terminal panel on top.

O.P. types are fitted in cast iron clamps with terminals on sides.

All "Parco" High Fidelity Transformers are designed to maintain a frequency constant of within 2 db. from 50 to 10,000 cycles per second.

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J. G. PARR (VK3OM), 90 Chapel St., St. Kilda, S.2. V. Win. 7280

Cairo !!

The International Telecommunications Conference, which was held in Cairo from January to April this year, was attended by 710 official delegates and the Governments of about seventy countries were concerned with its deliberations.

The Conference dealt with many things relating to telegraph, telephone and radio services. One of its last tasks was to modify somewhat the wave-bands employed for wireless services, mainly by way of widening the bands employed, especially in the higher frequency ranges. These changes will not become effective until September 1st, 1939.

The Conference has not allocated any wave-lengths to particular stations, but it has charged the Union Internationale Radiotelephonique with the formulation of a "new Lucerne plan" whereby an effort will be made to obtain an entirely new allocation of wave-lengths for broadcasting purposes. If approved (at another conference to be held before February 1st, 1939, in Switzerland), the new allocation will become effective six months later and, at the same time, an attempt may probably be made to modify the power of certain stations.

How the changes made at Cairo affect broadcasting and television services was explained by Sir Noel Ashbridge, controller of engineering, B.B.C., The long-wave bands (derogation and regulation) between 150 and 431 kc. remain unchanged. To the medium bands from 519 to 1,500 kc. there has been added a 60 kc. extension (downward from 200 to 192.3 m.). A new set of intermediate wavebands has been established between 2,300 and 4,965 kc. for the assistance of broadcasting in tropical and semi-tropical countries (between 30 deg. N. and 30 deg. S.). These are intended more for local use than for truly short-wave services over long distances.

Most of the changes have been made in the short wave-bands as follows:—6,000 to 6,150 kc. extension to 6,200 for relieving congestion in winter. A quite new 7,200 to 7,300 kc. band has been established for all regions (except the American continent), which is to be shared with amateurs; 9,500 to 9,600 kc. extension to 9,700. There is no change in the 11,700 to 11,900 kc. and 15,100 to 15,350 kc. bands; the 17,750 to 17,800 kc. band is extended to 17,850. The 21,450 to 21,550 kc. extension to 21,750 is not of immediate importance, but will be useful for overcoming sun-spot interference during the next period of solar activity. The 25,600 to 26,600 kc. band, which is not much used, remains unchanged.

The ultra-short wave-band, which includes television frequencies, has not hitherto been specified. Contrary to expectation, a definite demand for allocation was made at Cairo and so the following four bands have been established:—40.5 to 58.5 Mc, to accommodate three stations; 64 to 70.5 Mc. for one station; 85 to 94 Mc. for 1.5 stations, and 170 to 200 Mc. for five stations.

Although no frequency band lower than the first (6,000 to 6,200 kc.) has been allocated for long-distance broadcasting, Great Britain may utilise, by agreement with America, a frequency within a band of the order 3,500 to 4,500 kc. (85.7 to 66.67m.) for transatlantic broadcasting in the exceptional period when the sun-spot cycle renders the higher frequencies ineffective.

The whole of the foregoing has been reprinted from the *Electrical Review*, 6th May, 1938, and we note several rather interesting expressions of opinion notably that the Conference has modified the wave-bands, "mainly by widening the bands employed," and that a "new set of intermediate wave-bands has been established between 2360-4965 kc.," whilst a "quite new 7200-7300 band has been established for all regions

(except the American Continent) which is to be shared with amateurs." Even the television people have had a slice of the 56 mc. band allotted to them, whilst the 80 metre band has some valuable attractions for long distance broadcasting on transatlantic services.

Our natural reaction is to say it could have been worse, but on second thoughts it could have been a lot better. We mustn't be misled by the fact that we didn't lose much of our already restricted allocations, when we see to our dismay that certain countries will even be sharing part of our 40 meter band for broadcasting services. We are struck by the significance that the amateur whose numbers are **increasing rapidly** and who is really needing and deserving of **more space**, is actually getting a bit lopped off here and there.

The amount of licence fees received by the various Governments of the world from Amateurs should surely demand more consideration for our comfort and satisfactory experimentation, not forgetting our national value in time of war.

We know that because of our restricted frequency allocations, the Amateurs have been forced to rise to the occasion and design new and suitable equipment to even permit operation in territory impossible to most people. Are we pessimistic when we wonder if the new users of the 7200-7300 kc. portion of our band will find it very difficult to use because of the presence of so many amateur stations and at the next Conference seek to appropriate this portion or the whole lot for that matter, entirely for themselves.

In the meantime our policy must be determined, are we to use this section more consistently, perhaps as a phone band, or is it to be deserted in favour of the commercial stations, thus eventually losing it for ever. The Amateur has to wake up and improve his organisation or the commercial stations will drive him off the air with their selfish and grasping methods.

It is about time that the World's authorities realised that broadcasting services and broadcasting listeners are well served by present

allocations, as even the most devout listener is already tired by the continuous advertising drivel heard on the air on all bands from commercial stations.

Our policy is **more space for the growing Amateur fraternity** and we can logically put forward our claim for more space because of the steady annual increase of Amateur stations, and the increasing difficulty of securing effective communication on our crowded bands.

It is to be hoped that the fair treatment and consideration meted out to Amateurs here in Australia by our P.M.G.'s Department will be continued in a policy which will preserve the maximum space free of commercial interference for the Amateur, who represents a cultural as well as a national asset to the Commonwealth.

—The Editors.

We have advanced information from Mr. R. H. Cunningham, the Australian representative of the Eddystone manufacturers, that he will be marketing through his distributors some fourteen new lines that will be of particular interest to hams. This remarkable range has risen to about 119 components, all of which are available in Australia. Some of the lines to be landed within a few weeks are No. 1090 a Low Loss Frequentite Former and Base for transmitters. It is 5 inches long and 2½ inches in diameter, and will take up to 26 turns of 12 gauge wire. Fourteen holes are provided for tapings. No. 1096 is a flexible cable coupling which will drive through 90 degrees perfectly and enable condensers to be tuned from awkwardly located condensers up to 5½ inches away from the control. Everybody will be pleased to learn that the popular Microdenser series of condensers are to be made available in a special series for transmitters. No. 1094 has a maximum capacity of 18mmfd and flashes at 3500 volts. No. 1093 is especially suitable for C.O. tuning and tunes up to 60 mmfd. The new catalogues arriving soon illustrates all these lines and you are advised to book one now through your local distributor.

VK3VY

The following is a description of an unusual rig in operation at my shack.

The rig is built in rack and panel form using two racks each 6 ft. high and 18 in. across, one being used for the modulating system and speech amplifier equipment and the other the RF portion.

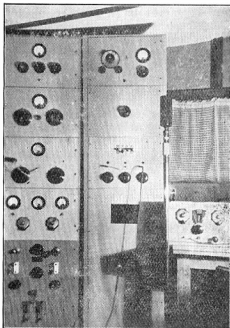
I have given much thought to the construction and design of this station, as I wanted to put a good quality phone transmission on the air (hi). I, therefore, chose the Philips EL3 penthode as a crystal oscillator which has performed very well. The tube has a very steep slope and with 250 volts on the plate and screen, an output of 5 watts RF could be got from it with only about 15 mA flowing through the crystal. This was a big advantage as I discovered that the crystal oscillator did not shift in frequency due to heating.

Owing to the tube having a big slope I chose it again for the doubler and the efficiency was excellent. The oscillator was capacity coupled to the doubler and with the same voltage on the plate and screen the output was quite sufficient to drive any medium powered tube. Both the oscillator and doubler were built on the one panel or rack and had a complete power supply so as to get good efficiency. The next stage to be added was a buffer which consisted of the Philips PEO5/15 screen grid tube. This tube I chose because it is very easy to drive and does not need neutralising. The tube is link coupled to the doubler and is assembled on the next rack above the oscillator and doubler. The tube with only 500 volts on the plate and 250 on the screen and working in class C requires only 5 watts R.F. to drive it and with fixed bias of 250 volts I obtain an output of 25 watts.

The next stage added was link coupled to the buffer. The P.A. consisted of a triode TCO5/25. This tube I found needed plenty of drive, hence the extra buffer stage, but it was well worth the trouble as I have had very good efficiency. With 700

volts on the plate and driving power of 20 watts one could get as much as 50 watts output on phone modulated 90 per cent. and the tube would not drop in efficiency or run hot.

In C.W. I have made tests into a dummy antennae and working the tube in class C plus with about 200 volts fixed bias on the grid one can obtain an output up to 100 watts without the tube running hot, but as this tube is only rated at 25 watts plate dissipation I did not go any higher.



Both the buffer and final P.A. have a complete power supply and fixed bias supply so as to obtain good efficiency. The final stage is also link coupled to the buffer. All stages have plug in coils except the final tank coil which is copper tubing. The antennae used is a half wave vertical voltage feed zeppelin fed at the ground end with quarter wave feeders and is series tuned. This aerial was chosen for low angle radiation on 40 meter band and has proved very satisfactory over all states. So much for the R.F. portion of the rig.

The modulating system was designed to give a good overall response from 50 cycles to 10,000

cycles. It consisted of a Bruno velocity microphone into a step up transformer to the grid of the first pre-amplifier. This transformer was made with a very high ratio 500 to 1, so as to do without an extra valve in the speech amplifier, thereby reducing hum trouble.

The first valve from the input transformer is a 6C6 resistance coupled to a 6C6 penthode with an equalising circuit in plate. This equaliser consisted of two swinging chokes, one $\frac{1}{4}$ henry with maximum D.C. resistance of 200 ohms shunted with a .0004 condenser which lifted the high frequencies and a 200 henry choke with 3000 D.C. resistance shunted with a .035 mfd condenser as the larger the condenser the greater the base reproduction was emphasised. The voltage applied to the plate of the 6C6 was very critical, as the higher the plate voltage, the less the chokes affected the frequency response of the amplifier as the lower the notes the higher the impedance of the tube was swung by the chokes and the greater the

amplification. I found about 45 volts on the plate to be the best. This tube was then resistance coupled to an EBC3 triode and then resistance capacity transformer coupled to two F443N penthodes in class AB. These tubes gave me 40 watts of audio output with only 3 per cent. distortion and only required 37 volts to fully drive them. The plate voltage required was only 550 on the plate and 250 on the screen. The screen voltage is very critical as the slightest variation in screen voltage caused the percentage of distortion to increase rapidly. These tubes are the modulators and are worked in push pull and are coupled to the final in Heising transformer modulation. The impedances of the transformer secondary and primary were matched to the tubes in use under 50 watt rating.

This unit was built in a similar rack and panel to the RF section as in photograph. The top rack consisted of a frequency meter and modulation meter and monitoring equipment.

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Federal and Victorian QSL Bureau

R. E. Jones, VK3RJ, QSL Manager.

Gordon McLeod (VK3ZZ), after a spell in V1S, has joined the H.M.A.S. Swan, and expects to be afloat for some time. Gordon says he will miss his 28 mc. activities, as this band intrigued him greatly and gave him much success.

The Poles were late again with notification of their DX contest, which took place between May 1 and May 15. All VK's who worked SP stations during this period are requested to QSL to enable the Polish competitor to score his points. Prizes to foreigners are:—"The best competitor in every country will receive a certificate. Three foreign competitors who will get the best scoring will be awarded special certificates and artistic prizes. Special prizes will be awarded to the best foreign competitors of Polish descent in all the six continents."

YR5CF, C. Florian, Str. Trotus 53, Bucharest, Roumania, states that during 1937 he enjoyed 50 VK QSO's, which he has acknowledged, but has received in return only 11 QSL's. He is extremely anxious to receive the remaining 39.

Alterations to European Bureaux include:—Estonia: E.R.A.U., Post-box 220, Tallinn, Estonia; Denmark: Arne Hammer, OZ7D, Norre Aaby, Denmark.

Another DX contest of which late notice was received is that of the Hungarian Shortwave Amateurs. Their contest took place during the week-ends of May, and logs and QSL's should be sent to N.U.H.S.A., Lendvay-u 8, Budapest, Hungary, by August 1. Foreign awards are: "The third of the participants in every country, at least one, but not more than three, will get a certificate."

VK6UK, Perce Kernick, an old-timer who is still active, recently enjoyed a trip to Colombo.

Apropos the recent country convention at Warragul, Mac, VK3XZ, writes to let us know that 3UL still

functions, and a census of all spares taken immediately after the gang left the station showed all present and correct.

Recent advices point to W2UK, Ralph Thomas, as the likely winner of the 1938 Yank contest, 176,000 points from 329 QSO's with 76 countries being his tally. A likely runner-up is VK3EG.

A correspondent says it in verse
A dashing young ham named Tim
Worked his DX with a great deal
of vim,
Said he, "I'm renowned
For covering ground,"
But, alas, now the ground covers
him.

Cards for the undermentioned VK3 stations are hibernating at the Bureau, 23 Landale street, Box Hill; a stamped envelope wakes them from their lethargy:—3AH, AP, BE, BJ, BK, CA, CC, CU, CV, DE, DT, DZ, EA, EC, EI, FK, FM, FT, GM, GN, HB, HP, HE, IL, IN, IR, JA, JS, KG, KM, KO, KP, KY, LD, LI, LM, LP, NA, NB, NF, OF, OI, OU, PB, PC, PH, PU, QO, QR, SD, SE, SF, SM, ST, TB, TD, TG, TT, TV, TZ, UC, UO, VB, VK, VX, VY, WH, WO, WP, WR, XA, XE, XU, YA, YG, YM, YS, YT, ZG, ZL, ZW, Dyson, Hurray, ECP, XKCH, Treloar, Webb.

Among the numerous country and interstate visitors to the June meeting of the Key Section of the Victorian division was Launse Deane, VK5LD. Launse looked in the pink, but more subdued and demure than of yore.

Sam Wilcox, VK3KC, explaining a long absence off the air, writes that he has a newly acquired YF. Congrats., Sam, and nuff said! We trust the new QRA will be as good on 56 M.C. as you anticipate.

W9IJY and W6CUR are at present appearing at the Melbourne Tivoli Theatre in the roles of a card trickster and mad musician respectively. Their season should extend into July.

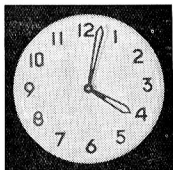
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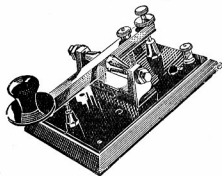


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XJS	J. Stickland, Hawthorn.	XNE	E. F. W. Goodwin, Essendon.
XJT	T. Pickford, Malvern.	XNF	A. M. Wright, Brighton.
XJU	W. V. Nicholls, Korumburra.	XNH	W. S. Tregear, Kensington.
XJW	C. W. Jamieson, St. Kilda.	XNJ	N. A. James, Homebush.
XJX	B. J. Mullett, Upper Pakenham.	XNM	A. E. Pritchard, Moonee Ponds.
XKA	G. F. Lloyd, Brunswick.	XNO	J. Boyd, Jun., Elsternwick.
XKB	E. L. Reynoldson, Strathmer-ton.	XNQ	A. Wellman, Kensington.
XKC	R. S. Wilson, E. Malvern.	XNT	C. Hazard, Brighton.
XKD	C. F. Cooper, E. Melbourne.	XNU	J. R. McConnell, Canterbury.
XKG	D. Hodges, Essendon.	XNV	M. L. Robertson, S. Yarra.
XKI	W. J. Miller, Croxton.	XNX	R. Horne, Kensington.
XKJ	L. Osburne, Terang.	XNY	T. Court, Jun., Malvern.
XKK	V. Nightingall, Elwood.	XOA	H. J. Wales, Elsternwick.
XKN	E. Hasselbach, Surrey Hills.	XOE	H. H. Blackman, E. Malvern.
XKW	W. K. Witt, St. Kilda.	XOF	W. H. Bruce, E. Malvern.
XKZ	C. E. Holland, Sth. Yarra.	XOG	G. A. Soilleux, Camberwell.
XLA	W. Aitken, Jun., Elsternwick.	XOI	C. S. Pugh, Preston.
XLB	R. M. Dalton, Auburn.	XOL	V. Way, W. Brunswick.
XLC	A. Horbury, Bendigo.	XOO	L. Birchall, Richmond.
XLD	C. Hiam, Jun., Balaclava.	XOQ	R. Chugg, South Yarra.
XLF	R. B. Ashe, M. Brighton.	XOR	C. Reay, M. Brighton.
XLG	T. J. Entwisle, Camperdown.	XOS	R. P. Bruce, Flemington.
XLK	A. R. Goode, Moonee Ponds.	XOT	J. M. L. Crombie, Malvern.

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XOU	C. Taylor, W. Melbourne.	XJCS	J. Matthews, Sunshine.
XOZ	C. H. Swanton, Kew.	XJCT	V. Meyers, Melbourne.
XPA	G. H. Myers, Elsternwick.	XJCU	A. B. Corkill, Moonee Ponds.
XPB	R. L. George, Mont Albert.	XJCV	R. Field, Kew.
XPD	C. C. Bailey, Malvern.	XJCW	J. Welch, Murrumbena.
XPF	Jas. H. Wilken, Kilsyth.	XJCX	C. Bannister, Brighton.
XPG	A. H. Wain, South Yarra.	XJCY	C. Semmens, E. St. Kilda.
XPB	A. Holst, Caulfield.	XJCZ	H. E. Taylor, Camberwell S.
XPI	Jas. McNair, Brunswick W.	XJDA	C. Forshaw, Elwood.
XPJ	Wireless Institute of Victoria, Melbourne.	XJDB	K. Francis, Coburg.
XPL	O. E. Rawson, Richmond.	XJDC	C. T. B. Knell, Windsor.
XPO	H. J. Taylor, Warracknabeal.	XJDD	H. M. Shannon, Brunswick.
XPP	W. Ming, Melbourne.	XJDE	I. Hughes, Kew.
XPR	G. Flanagan, Ascot Vale.	XJDF	Captain William Clarkson, Toorak.
XPS	W. C. H. Hodges, Malvern.	XJDG	J. A. Campbell, Toorak.
XPU	H. C. de Crespigny, Middle Brighton.	XJDH	E. G. Offen, Middle Park.
XPV	L. L. Dredge, S. Preston.	XJDI	A. Stocks, Surrey Hills.
XPW	H. S. Kennedy, Coburg.	XJDJ	F. G. Cathcart, Canterbury.
XPZ	S. Newman, Canterbury.	XJDK	T. Cummins, E. St. Kilda.
XJAA	C. G. B. Colquhoun, South Yarra.	XJDL	A. McKay, Hawthorn.
XJAB	C. M. Urquhart, Albert Park.	XJDM	J. Fitchett, Balwyn.
XJAC	B. C. L. Harvey, Port Mel- bourne.	XJDN	F. S. Barnett, North Wil- liamstown.
XJAD	C. J. Brown, Melbourne (Ch. of E. Grammar School).	XJDO	A. C. Smith, Matlock.
XJAF	C. R. Smith, Caulfield.	XJDP	G. G. Robb, Croxton.
XJAH	G. H. Stillman, Brighton.	XJDQ	C. Crowther, Canterbury.
XJAJ	A. Crook, Castlemaine N.	XJDR	W. L. Leunig, Jun., Sale.
XJAK	J. Rafferty, Hawthorn.	XJDS	A. H. Morris, Sale.
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XJAT	R. W. McKellar, Toorak.	XJDY	L. A. Adamson, Melbourne. Wesley College.
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XJAX	F. P. O'Dea, Ascot Vale.	XJEB	J. Hesketh, Kew.
XJAZ	C. McCracken, Armadale.	XJEC	B. Coutts, Camberwell.
XJBA	W. Jameson, Albert Park.	XJED	H. MacKinolty, Korumburra.
XJBD	E. C. Nicholl, St. Kilda.	XJEE	A. P. Scott, E. Malvern.
XJBF	J. H. R. Butler, Brighton Beach.	XJEF	D. Fitzgerald, Collingwood.
XJBH	W. D. Brookes, S. Yarra.	XJEG	H. A. Gatfield, S. Yarra.
XJBI	A. Brown, Abbotsford.	XJEH	E. Drake, Camberwell.
XBJM	L. Latham, E. Camberwell.	XJEI	E. Robinson, Caulfield.
XJBN	E. Scott, Elsternwick.	XJEJ	E. Mustard, N. Fitzroy.
XJBP	C. A. Smith, M. Brighton.	XJEK	J. H. Beyer, Armadale.
XJBU	H. Thompson, Albert Park.	XJEL	T. G. Foord, Gardiner.
XJBY	J. Mathieson, St. Kilda.		
XJCA	E. G. Holder, Hawthorn.		
XJCB	L. Smith, East Malvern.		
XJCC	G. H. Henley, Clayton.		
XJCD	J. C. F. Burrows, Kew.		
XJCG	L. Roche, Hawthorn.		
XJCL	J. B. Arnold, Moonee Ponds.		
XJCM	W. E. Sanson, Warrnambool.		
XJCN	W. K. Davenport, St. Kilda.		
XJCO	C. R. Dodson, Fairfield.		
XJCP	R. Mitchell, Royal Park.		

Victorian Division Annual

General Meeting

July, 27th

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Phone Section Representative	J. KLING VK3JB.
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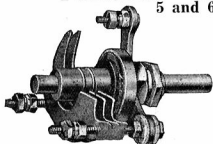
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Divisional Notes

To ensure insertion all copy must be in the hands of the Editor not later than the 18th of the month preceding publication.

N.S.W. Division

D. Reed, Secretary, VK2DR, Box 1734 JJ, G.P.O. Sydney.

Country Zone Officers.

Zone 1 (Far West).—J. Perooz, VK2PE, Hope Street, Bourke.

Zone 2 (North-West).—H. Hutton, VK2HV, Byron Street, Inverell.

Zone 3 (North Coast).—R. J. Berry, VK2NY, 54 Bacon Street, Grafton.

Zone 4 (Hunter River and Coalfields).—R. W. Best, VK2TY, 57 Hunter Street, Newcastle.

Zone 5 (South Coast and South-West).—R. Ross, VK2IG, 673 David Street, Albury.

WAVERLEY RADIO CLUB.

(By VK2AHJ.)

Direction finding receivers have been occupying the time of all of the club members during the last six weeks, the reason being the rapid approach of 5th June, the day set down for the club's annual field day at National Park. In due course the day arrived and the Transmitter Hunt was in full swing. The Hidden Transmitter as supplied by 2ABS consisted of a 6P6 eco on 7mc. suppression grid modulated by a 57-57 combination and a D104 mike was used. Power was derived from two 180 volt genemotors in series, the input being about 10 watts.

Frame aerials were the order of the day, and various types were used. The receiver used by the winner, 2AFZ, consisted of a detector and audio, the grid and reaction coils both being wound on the same frame. 2AHJ made use of an old collapsible BCL frame 2 feet square with the antenna coil of 1½ turns used as the

grid coil of a 32 TRF stage, followed by a 15 ec detector.

2WN supplied the only mobile transmitter, which was built in a small aluminium box with a D.F. receiver. Condolences must be offered to Bill Starley, who had the misfortune to drop his receiver prior to the outing, thus ruining his chances in the field—also his 32.

Col Saunderson had considerable success with a straight piece of wire as aerial, and, says Col, he had very good directivity with it. At the meeting following the outing it was unanimously agreed upon to hold a further field day on 15th July on 3.5 mc.

At the election of officers on 7th June, the members showed their appreciation of the fine work done by Mr. G. Wells by returning him to the office of president. The offices of vice-president, secretary and treasurer were filled by Messrs. Lusby, Howes and Johnson.

Inconvenient working hours have prevented 2AHB attending the recent meetings, but, according to information via the ether, Arthur will come along at the first opportunity.

The new club transmitter promises to be something out of the bag—wot with thermo—frequency control 'n all, and will be in action very shortly, so you had better detune your RF stages just in case.

NORTHERN DISTRICT ZONE NOTES.

VK2KK.—I guess Matt you are kept busy getting the B Class, 2CK, on the air to hear much of you, but I understand the Y.W. is quite good on the air, so let's hear a little more of you.

VK2KE.—Have not heard you this month Bill, understand your qra is changed once again, but don't listen much on 7mc. so may have missed you.

VK2KZ.—Old Max in bad luck, is giving radio up, selling off, some good gear going for sale, retaining a little gear in the hope for better days, sorry to hear it OM.

VK2YO.—Hear you now and again George, playing around on 14mc. on phone, working a few Yanks, trying 6L6 tubes in modulators, but do not match Class B transformers, hope your new 60 foot stick goes up o.k., guess you have to call the boys in to erect it and supply a keg some week-end.

VK2XT.—See you now and again Bill in Kurri, what are doing in radio, have you a station going? Bill is local salesman and serviceman in local store, but lives in Newcastle.

VK2DG.—Old Keith gets plenty dx on 14 mc and is on regularly using 808 in final at 40 watts and a zepp antenna, about 108 countries, and 84 verified by qsl, so good going, also a stamp collector, may be heard regular on 14mc.

VK2YL.—Don't hear you much, Harry, OM., hope the class B modulator turned out all right; have heard you on 14mc very weak, but of course skip caused that.

VK2CW, 2PZ, 2CX.—Nothing to report on you three chaps as have not heard you, so drop a line please.

VK2YQ.—Hear you regularly, Jack, with old Gilbert 2XU on the mike, you come in fairly good, and you sure work G. very nicely on your qrp, OM., and say Gilbert, drop in again, some time since I saw you, OM.

VK2XQ.—Well, John, understand you're back in Maitland again, rebuilding so 2TY informs me, so please drop out to see us or drop a line, John, as it's years since you left this zone.

Victorian Division

Key Section (ByVK3HK)

At our June meeting an interesting technical lecture was given by 3UK by reading before the meeting some papers that were given at lectures in Sydney during the recent Sesqui-centenary convention.

Well, let's see what the boys are doing.

3WG.—Since 3ML shifted Bill has a new interest in radio, and has converted his sleep-out into a shack.

3RX.—Has a new 10-20 receiver under way using octode.

3HC.—Busy building transformers commercially with Trimax.

3BQ.—Still grinding xtals. Has xtal saw and is producing 20 metre high power xtals.

3YP.—Is off to Cairns again via Brisbane, per "Kanimbla" for about two months.

3OC.—Is playing round with recording gear and junkbox amplifiers.

3MR.—"Snow" has taken up tennis, and, we fear, Y.L.'s! He threatens to return to Tassie in a couple months.

3CZ.—Is engaged! That's why he didn't know 3ML had shifted to within 200 yards of him!

3CX-3UE.—Have been buying up alleged crystals from local opticians. They are still trying to build a frequency meter to check them—Oy!

3UM.—Given 20 mx a break and trying luck on 5 mx fone.

3ZU.—On 5 mx fone and how!

3JI.—Trying to neutralise a 6L6G still QRT.

3ZY.—Giving cw a break on 7 and 14 mc.

3KR-PR-YK.—All seen at meeting where 3KR serving his "probationary term" before being admitted to ranks of VIM!

3AH.—QRL with University course. Thinking of putting a rig together.

3HK.—Thinking of putting up some kind of directive antenna on Europe to combat some of the W QRM—maybe a W8JK beam using four sections instead of usual two sections, so as to get better gain and directivity than usual.

COUNTRY SECTION NOTES.

(By VK3UK.)

Considerable interest has already been aroused in the country by the Division's new Experimental Section scheme as, when organised, it will be of tremendous assistance to country men who may have difficulties with some portions of their gear or may wish to co-operate in some definite line of experiment. A proposed UHF Country Group would, from present indications, have an initial membership of over fifteen and it has already been suggested that a country mc relay be organised in hops of about 75 miles, around the country districts.

EASTERN ZONE.

(3DG-3PR)

3IL.—Not heard lately, sigs might possibly be in skip now.

3GO.—Graham getting out fb on 40 mx fone, in fact all bands, the bcl's say. With Ron 3LY, they had the pleasure of a qso with 3LY the pirate. Oh, boy, what did Ron himself say?

3EG.—80 mx is back to normal again, so what about some more dx on it, ob?

3LY.—Ron back from holidays, but not as yet even thinking of coming back on the air. Says a pirate is doing a fb job for him, so why worry yourself?

3EA.—Fish must still be on the bite, as no sign of Eric anywhere.

3SS.—Vrey QRL and with a shift in view will be off the air for a time.

3QB.—Rebuilding recr. and proposes adding another stage to mitter.

3XH.—Not heard on yet, but still hoping to hear you, Stan.

3JE.—Bill prefers bulls' eyes to qso's, hence the inactivity. But you can't shoot after dark, Bill.

3DI.—Also qrl, but did mention of getting a xmitter going again on 80 mx.

3WE.—Willie, we have missed you, also your big fat sig., but just wait, boys, it won't be long now.

3PR.—Ron not hear on so much lately grl. Heard to be installing a home lighting plant.

3DG.—Has an 807 to instal, may be followed later by 809 or pair of them for P.A.

WESTERN ZONE.

(VK3HG)

3XG.—Has reappeared on 7 mc. with quite good phone after long absence.

3CK.—Gets on occasionally when time permits, but is QRL with farm work. Has vibrator type power supply ready for action.

3PE.—Seems to be a man of leisure as is very consistent on 14 mc in the afternoon s, and is raising the DX in great style.

3WT and 3SZ.—New hams in Geelong and Hamilton.

3DX.—Very good Sunday transmissions on 250 metres.

3TM and 3JQ.—Also 250 metre phone men.

3TW.—Still as active as ever on 7 and 14 mc.

Ex-2SL.—Reported to be settling in Hamilton and starting up from there.

3OW.—Too busy selling BCL receivers to get on the air at all.

3GA.—Has Bliley crystal and is starting up again soon.

3JA.—Active on 7 and 14 mc. as usual.

3HG.—Getting very good results with the new V beam recently erected. Reported to be the strongest VK phone in England at present.

NORTHERN ZONE.

(3ZK-3HX.)

3OR.—Is active on 80 and 40 mx, but has hopes of getting down to 20 soon. Murray is talking Vee beams.

3TL.—Spends most of his time on 20 mx with success and otherwise.

3BM.—Bruce, oh Bruce, where are you? Bruce has a mast up now, and intends or has erected a rhombic, but as Bruce hasn't been heard for some time we don't know what he is doing. Name the day, Bruce, and put us out of misery.

3CE.—Is amongst the absent ones, as Roy says, he has a lot of stray live stock depending on him for their food and he hasn't much time left for radio.

3WN.—Is again active with rather a good signal at times.

3HR.—Has been heard on 40 mx fone, and a good sig.

3EP.—Works 20, 40 and 80 mx. Ted is doing some fb 20 mx work; plenty of Yanks and sundry other countries. Gets or has got up at 4 a.m.

3TS and 3FF.—Are, we understand, on 20 mx, or maybe 10; heard a report of a rather large power xformer being built for them in Vim. Yes, they are putting in a pair of 809's following a pair of 807's in PP.

3IH.—Had a visit to VIM during the month, where 3KR saw that Fenton didn't get into trouble. Fenton has retired to the background, leaving most of the rag chewing to May, who, we may say, is very capable.

3DU-3TC.—Paid a visit to Charlton, where he didn't get a chance to draw a deep breath. Doug was taken to the talkies (?) and he reckons that Laurel and Hardy are the best ever. What say, Doug?

3ZK—Still keeps the jaw active eating his meals, three a day, he tells us. Is building a new Rx 6D6 TRF 6C6 and a 42.

3BG.—Is still on 20 mx, and working the world.

3EF—Still holds his end up on 40 mx.

3HX—Has made a comeback after an inactive period. Has been tied up in civic affairs.

South Australian Division

(By VK5KL.)

Interest during the next month will be held by the holding of two contests in the VK5 division. The first will be for country members only. A written article on any piece of equipment suitable for a country ham's shack. This must not be operated from any mains supply. Entries close on 31st July, 1938. The second contest for Institute members is to be in the nature of an all-band message originating and relaying contest. Bands to be used are 160, 80, 40, 20 and 10 meters. Hours of duration are from 9 a.m. to 12 noon on Sunday, 3rd July, and on Sunday 10th July, from 7 p.m. to 10 p.m. These hours will give times for most of the country members to be audible in the city. The full rules have been circulated to all members, so a fine muster of entrants is expected.

During the latter part of May a no brighter personality than Dudley Nourse, VK2DG, Broken Hill, was married, and was met in Adelaide as he passed east on his honeymoon accompanied by his four days' married blushing bride. Congrats. Dudley!

Conditions on the 20 meter band during the month have been bright early in the mornings for European qso's. 80 meters at the moment is showing signs of reviving, especially when it is known that many W stations are audible and being worked by ZL's on fone.

WAKEFIELD ZONE.

(By VK5RE.)

VK5LR.—Jack is one of the few fone men with a proper regard for sensible operating procedure. Don't think we have heard him say "hi!" on fone, and he appears to keep the Q-code for C.W. operation. Makes

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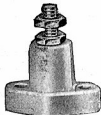


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5HS.—Very quiet. Most of us are still looking forward to a contact with Wally, and hoping that he will get busy soon. Would like details of the rig, O.M.

Lance Catford.—Still waiting to hear that you are ready to sit for the exam., Lance! Just about ready? Good! Best wishes from the whole gang.

5RE.—Had the pleasure of seeing Col. Bottrall in Renmark recently. Col. has been doing the river districts "a la caravan," and looks to be in the pink.

GREY ZONE.

(By VK5WG.)

Conditions much the same as last month, 80 mx still a very popular band. Plenty of activity on 40 mx during week-end.

5HR.—Bill, I understand, is at Mirlaton in the role of radio mecha-

nic. Has no transmitter at present.

5MP.—Len has been building a 5-meter super. It is now complete except for signals!

5YM.—Is on the air spasmodically. Believe he, together with 5MP and 5FW have been working like niggers burying miles and miles of wire. What is the job, Norm?

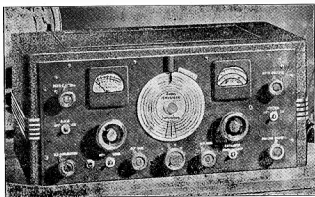
5BK.—Jack has not forsaken the amateur bands altogether, but I believe he is bothered quite a lot by harmonics from two broadcast stations.

5NW.—Snow is active every second week on 80 mx and 40 mx.

5FB.—Was in the city recently, and as he found time hanging somewhat, just trotted along and sat for the broadcast ticket exam. Has already passed the 1st class.

5KJ.—Sat through one night listening to test cricket broadcast, and turned out of bed at 3.45 p.m. George certainly likes his sleep.

5LC.—Have you ever heard Les on 80 mx in the evenings? Calls CQ at 8 p.m. At 8.15 he says he is



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(America)
SKYRIDER
COMMUNICATION
RECEIVER
AND END YOUR
TROUBLES!

SKY BUDDY, 5 tubes, tunes from 18.5 to 545 kc., with built in speaker and A.C. power pack, £15 (plus duty).

SKY CHAMPION, 8 tubes, 7 to 550 metres, built in speaker and A.C. power pack.

CHALLENGER II., 9 tubes, 7 to 550 metres.

SUPER SKYRIDER, 11 tubes, 5 to 550 metres.

SPECIAL SUPER SKYRIDER, 13 tubes, 5 to 550 metres, with two stages preselection.

ULTRA SKYRIDER (tunes in 5 metre stations with same ease as lower frequency signals), 10 metal tubes, tunes 3.75 to 53 metres, direct dial calibrations, unique band spread system, iron core expanding I.F. trans., single signal crystal control.

PARTICULARS FROM AUSTRALIAN FACTORY AGENT:

JOE KILGARIFF (VK5JT), BOX 1015J, G.P.O.,
SOUTH AUSTRALIA (F2490).

going to bed, and closes down at 11 p.m.

5TL.—Is going to get busy on fone. This, in response to requests from the fone gang who find themselves unable to copy code in these enlightened days.

5WG.—Hopes to be devoting a bit more time to 40 mx in the near future. A new station round 7250 would be welcome.

BARKER ZONE.

(By VK5GW.)

5BF.—Frank has erected a rotary beam antenna. At present it is only a temporary structure, but if results justify it, a more elaborate affair will take its place.

5BG.—Is now on fone, has installed crystal-control, and is putting out a very nice signal.

5YL.—Betty, surely you will come into line with the rest of the Murray Bridge gang and start up some fone on 7200-7300.

5XR.—Cam., you must get busy on fone again and keep Naracoorte in touch with the rest of the State. What do you say, O.M.?

5BN.—Believe Graham is now on fone as well as C.W.

5CJ.—Has been working Adelaide stations on fone.

5GW.—Promises that in future he will see that his zone notes are in the hands of 5PN not later than the fifteenth of the month.

Tasmanian Division

(By 7YL.)

The annual meeting of this division took place on Saturday, 11th inst., at 7 p.m. A good attendance of the Southern members was noted, but the North and North West had but few representatives. Among the visiting hams were 7JH and two friends, 7QZ and 7AB. The other Northern members for various reasons were unable to attend.

At the conclusion of the most unusual meeting all hurried to the "Ship Hotel" for the dinner. Prominent among our visitors were Mr. Conry, our new R.I., and Mr. Bowden, the former R.I. At the end of an excellent meal the usual toasts were made, after which everyone

chin-wagged and then returned straight (???) home to listen to the first test.

Scandal:—

7CM.—So busy rebuilding his receiver that he forgot the annual dinner and did not wake up until too late. Too bad, Charlie. At present experimenting with a W8JK beam.

7DH.—Doing a little work at one of the local broadcasting stations. Going to the "dogs," I guess.

7CT.—Reports having built a battery receiver. Uses it so very often that the batteries will probably give up ghost through lack of usage. What did you drink at the dinner, Terry?

7KV.—Kept decidedly quiet at the meeting. Keith was very busy taking notes, but relaxed thoroughly afterwards.

7JB.—Has just completed a new super-superhet. that worked A1 first pop. I am told Suzy wants a receiver that will work properly Buck.

Other members present at the dinner were 7JH down from Waddamana for the occasion; 7PA and his brother, 7AL; 7LH from the local fire brigade, and 7AR, who possesses an awfully f.b. car.

7ZL.—Thinking of extending the shack for when nine visitors arrived on Sunday there was hardly breathing room let alone standing or sitting space.

A special toast was proposed in honour of 7AH, who, in spite of his years, acts very capably as president. "Pop," in replying, said he had felt considerably younger and better since his return to the Institute.

7AB and co. arrived from Launceston in a super car, and only came through at a cruising speed of 90 m.p.h. Doug's xyl accompanied him to keep him and his comrades in order, hi!

7QZ.—Rather surprised by the number of QSL's that have arrived for him through the bureau during the past month.

7CK.—By this time will have the mains laid on to his qra. After continually chasing away the cows to prevent them from drinking the contents of the pond so that his dc supply would remain constant, this must be a welcome break for Pokey.

(Continued from page 18)

THE EDDYSTONE PRODUCTS.

The P. and L. Wireless Supplies Pty. Ltd. feature the famous Eddystone products, for which this live concern are Victorian distributors and of which large stocks are carried. Hams, town and country, are cordially invited to call or write to 31 Hardware street, Melbourne, where Mr. Aarons or Mr. Johns, or members of an expert staff, are on the job and chock full of enthusiasm. Note also in this issue the advertisement of R. H. Cunningham (VK3ML), who is the Australian representative for the Eddystone Company.

ARTHUR J. VEALL PTY. LTD.

"Veall's six big stores" are popular rendezvous for amateurs. Necessarily the range of goods they carry is very extensive and the choice a correspondingly wide one. At present the big firm is featuring frequent transmitting condensers, including a midget type. Hams are asked to have their names recorded on Veall's special list of transmitters entitled to special prices. The firm is now settled down and reporting up grade business all the time at the big new headquarters at 490 Elizabeth street, Melbourne.

THE HILCO TRANSFORMERS.

Our special representative during the month chatted Mr. Leslie E. Cole, managing director Hilco Transformers Pty. Ltd., of Berkley street, Carlton, Melbourne. He found the factory going at full capacity and was told a story of rapid development in a few years from a modest commencement and ambitious plans for the future. "The power equipment with a powerful reputation" is the firm's slogan and amateurs' requirements in transformers, chokes, etc., are safe.

THE SIEMENS ELLIOTT INSTRUMENTS.

Similarly in their own line the famous Siemens Elliott instruments "for every requirement" need no further recommendation than their own established supremacy. Siemens (Australia) Pty. Ltd. issue a standing invitation, "Submit your instrument problems to us."

THE WESTON INSTRUMENTS.

The world famous Weston Instruments for which Warburton Franki (Melb.) Ltd. are representatives, are offered and sold under the undeniable guarantee that "their uniformity of response never varies." The range of D.B. indicators—comprising three types, high speed, low speed, and general purpose—are known to all radio men as an acme of precision due to skilled engineering and years of experience in the manufacture of high quality radio and electrical equipment.

PRICE'S RADIO SERVICE.

A prompt and efficient service is on hand at Price's in Angel place, Sydney. At present the Radiotron Battery Seven is being specially featured in conjunction with the A.C. Radiotron Light.

KINGSLEY RADIO.

Kingsley Radio Pty. Ltd., of Little Collins and Spring streets, Melbourne. There's a fine range of products there for amateurs, including Eddystone parts, power chokes and transformers, tubes, condensers and also Trolitul, an interesting insulating material of special merit.

AND FURTHERMORE—

Bright Star Radio (VK3UH) offers crystals ground from best Brazilian quartz, plug-in dust proof holders, etc.; J. G. Parr (VK3OM) presents his new complete list of transformers; our old friend, Max Howden (VK3BQ) tells the story of his always dependable crystals; and a new announcement from Joe Kilgariff (VK5JT), of South Australia, releasing the Hallicrafter "Skyrider" receiving sets in an interesting range from 5 to 11 tubes.

So there you are, Hams, we've secured the ads. and we trust, earned the goodwill of the advertisers. Your indispensable job is to take advantage whenever possible, of the service offered by these different firms, and justify to the fullest extent you can their fair and square request: "Help us to help you!"

TRADE

ABAC

MARK

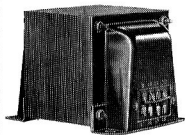
STRAIGHT LINE

TRANSFORMERS & CHOKES

For Every Application

POWER TRANSFORMERS FROM 1 TO 20,000 VA.
HIGH FIDELITY AUDIO TRANSFORMERS
FLAT FROM 30-10,000 CPS & ASTATICALLY WOUND.
MODULATION TRANSFORMERS & REACTORS.

UNIVERSAL MODULATION TRANS- FORMER



PRIMARY is tapped to match modulator units with plate-to-plate loads of from 2500 to 18000 ohms, and to carry 30 audio watts.

SECONDARY can be matched to any Class C stage—from 500 to 14,000 ohms—and is designed to carry up to 200 m.a. d.c.

Obtainable from
P. & L. WIRELESS SUPPLIES
PTY. LTD.,
31 Hardware St., Melbourne.

Sole Selling Agents:
HOWARD RADIO PTY. LTD.,
Vere Street, Richmond.

MANUFACTURED BY

TRIMAX TRANSFORMERS

(A DIVISION OF CLIFF & BUNTING PTY. LTD.)

29-35 FLEMINGTON ROAD, NORTH MELBOURNE.
PHONES—F1346, F2550.

Hamads

Advertising space in these columns is available to those wishing to sell, buy or exchange, at 3d. per line; approximately five words to the line. Minimum charge, 1/-. To ensure insertion enclose postal note or stamps with copy, and address to the Advertising Manager, "Amateur Radio," White Horse Road, Box Hill, E.11., Victoria.

ATTENTION, PLEASE!

Special Prices in HAM GEAR for sale.

GAMMATRONS TYPE HKH54 at 63/- each.

TAYLOR Type T-40 Tubes at 36/- each.

RECTIFIER TUBES, Type 866, highest quality, at 16/- each.

TRIPLETT METERS, Type 221 0-100 ma., at 31/- each.

ONLY FEW OF EACH, SO SNAP 'EM UP.

WE PAY POSTAGE. CASH WITH ORDER.

Obtainable
VK3FA, B. FALKENBERG,
BYADUK, Vic.

BRIGHT STAR RADIO, VK3UH,
517 Lower Malvern Rd., Glen Iris,
S.E.6.

Crystals ground from best Brazilian quartz and tested to 50 watts input to penthode oscillator, as used by leading experimenters and DX stations throughout Australia; accuracy plus or minus 3 KC's.

200, 160 Metre	15/-
80 Metre	10/-
40 Metre	£1/5/-
465 KC Xtal Gates	£2

Power transformers constructed to specifications. Receivers and Transmitters constructed.

Triad first quality 866 mercury vapour Rectifiers, 7,500 volts peak, 18/-; National type N Dials, £2 each; Taylor T20 Triode transmitting tubes, 20 watts plate dissipation, 42 watts RF output, price 30/- each.

Taylor T55 Triode Transmitting Tubes, £4 each.

Call or write above address.

Phone U1218.

Satisfaction guaranteed.

RADIO Station for sale. Write for list. VK2YO, Pelaw Main, N.S.W.

WANTED. Weston Milliameters Model 301. 0-10, 0-50, 0-150 VK3UK, 75 Argyle road, Kew, E.4.

XTALS by W9ADN, BT cuts, 3.5 mc, 20/-; 7mc, 22/6; XTAL MOUNTS, American, 8/6; R.F. CHOKES, 10/200 mx, 200 ma, 2/6; 5MX, 1/11; BUGS, VIBRO PATERN, nickel plated, enamelled steel base, last lifetime, over 50 in use in Telegraph Branch, Melbourne, 35/-, plus postage; KEYS, P.O. pattern, nickel plated, 14/6, plus postage. VK3RJ, 23 Landale st., Box Hill, Vic.

Use the Hamad Column for anything you wish to Buy Sell or Exchange.

IT BRINGS
RESULTS!!

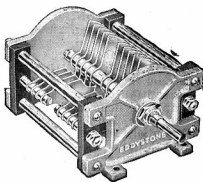
(Continued from Page 20.)

As I said before, these stations and the gentlemen concerned will be duly reported by other contributors to this narrative, but we at 3WI had some very excellent "contacts," if they could be called by such a simple term, with 3KU, 3NP, 3EN and 3PB. To mention only two of the mysterious feats that the relay stations accomplished; on several occasions we had short duplex QSO's with 3KU and 3NP. Now, these stations operated on 14 mc. and 28 mc. respectively and our receiver was tuned to 3EN or 3PB, both on 7mc.—so just how it was done may be explained by these gentlemen. I hope so.

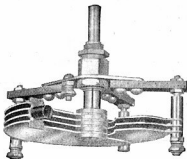
And so to sum up the week-end's operations—Although as up to date no DX reports of 5 meter reception have come to hand, I think I voice the sentiments of all concerned in saying that the whole "test" from 5 meters to 40 meters (to say nothing of a relay by 3RJ on 1173 kc. on Saturday night) was a huge success.

EDDYSTONE

Modern Components for Modern Stations



No. 1081—50 x 50 mmfd. 3500
volts **38/6**
No. 1082—100 mmfd. 3500
volts **34/6**



No. 922—2.5-160 mmfd. for low
power **13/10**
No. 979—2.5 to 100 mmfd. for
inputs up to 250 watts . . **16/-**

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R. H. CUNNINGHAM (VK3ML)
94 ROBINSON ROAD, HAWTHORN, VIC.

QSL CARDS?

COMPLETE PRICES.

ONE COLOR Ink, on White or Tinted Board:—

250	12/6,	plus sales tax 6d;	£0 13 0
500	15/6,	" " 7d.	0 15 7
1000	22/6,	" " 11d.	1 3 5

TWO COLORS in Ink, on White or Tinted Board:—

250	18/9,	plus sales tax 9d;	£0 19 6
500	22/6,	" " 11d.	1 3 5
1000	33/9,	" " 1/4d.	1 15 1

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